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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER

KAO, CHIH CHENG G

ART UNIT PAPER NUMBER

2882

DATE MAILED: 11/19/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/620,943

Applicant(s)

KELLER ET AL.

Examiner

Chih-Cheng Glen Kao

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 25 September 2002.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 2,3,5,6 and 18-29 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 2,3,5,6 and 18-29 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☒ The proposed drawing correction filed on 17 April 2002 is: a) ☒ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 11.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

1. Claims 2, 3, 5, 6, 18, 20, and 23-27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hoen (US Patent 6,253,001) in view of Wingo (US Patent 5796884), and Huibers et al. (US Patent 6337760).

Hoen discloses an optical, path-to-sight link, comprising light beams (col. 5, line 55) steered by a controllable beam steering device (Fig. 1, #16) with predetermined control signals (col. 3, lines 5-6) having a plurality of two axis rotatable mirrors capable of being rotated in a single axis (Fig. 6) comprising silicon or metal (col. 9, lines 56-60, and an actuator (col. 4, lines 25-28) with inherent control signals.

However, Hoen does not disclose a transmitter with a light source and micromirrors, a remote receiver with a photodetector, and a control loop coupling control of the micromirror and receiver by a circuit.

Wingo teaches the light source and photodetector as a transmitter and receiver. Huibers et al. teaches a transmitter with a light source and micromirrors (Fig. 18, #630 and 636), a receiver with a photodetector (Fig. 18, #638), and a control loop coupling control of the micromirror and receiver by a circuit (col. 12, lines 20-21 and 34-43). Huibers et al. teaches a

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remote receiver (Fig. 17, #618) in comparison to the receiver of the other embodiment (Fig. 18, #638).

It would have been obvious, to one having ordinary skill in the art at the time the invention was made, to have the transmitter and receiver as labeled by Wingo with the control loop of Huibers et al. with the devices of Hoen, since one would be motivated to make fine adjustments to the mirror so as to steer the beam in the proper direction as shown by Huibers et al. (col. 12, lines 41-43).

It would have been obvious, to one having ordinary skill in the art at the time the invention was made, to have the remote receiver of Huibers et al. with the suggested device of Hoen in view of Wingo and Huibers et al., since rearranging parts of an invention involves only routine skill in the art as implied from Huibers et al. (Fig. 17 and 18). One would be motivated to have the receiver remote to control a different array of mirrors as implied from Huibers et al. (Fig. 17 and 18).

2. Claims 19, 22, and 28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hoen in view of Wingo and Huibers et al. as applied to claim 18 and 23 above, and further in view of Abeles et al. (US Patent 6014237).

Hoen in view of Wingo and Huibers et al. suggests a system as recited above.

However, Hoen does not disclose modulation and demodulation for Ethernet protocol.

Abeles et al. teaches modulation and demodulation (Abstract, lines 13-20 and col. 14, lines 28-32)) for a variety of protocols including Ethernet (col. 7, lines 9-12 and 18-20).

It would have been obvious, to one having ordinary skill in the art at the time the invention was made, to include modulation, demodulation, and Ethernet protocol of Abeles et al. with the system of Hoen in view of Wingo and Huibert et al. since one would be motivated to utilize a system that has far fewer components than conventional optical transmission systems and having a potential for much larger bandwidths to process greater amounts of information as shown by Abeles et al. (col. 2, lines 45-52, and col. 1, lines 40-46).

3. Claims 21 and 29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hoen in view of Wingo and Huibers et al. as applied to claim 18 and 23 above, and further in view of Duguay (US Patent 5,671,304).

Hoen in view of Wingo and Huibers et al. suggests a system as recited above.

However, Hoen does not disclose a VCSEL laser diode.

Duguay teaches a VCSEL laser diode (col. 6, lines 22-24).

It would have been obvious, to one having ordinary skill in the art at the time the invention was made, to include the VCSEL laser diode of Duguay with the system of Hoen in view of Wingo and Huibert et al. since one would be motivated to utilize its extremely high performance levels as shown by Duguay (col. 2, lines 26-39) for strong signals, as well as cost and size purposes.

Response to Arguments

4. Applicant's arguments with respect to claims 2, 3, 5, 6, and 18-29 have been considered but are moot in view of the new ground(s) of rejection.

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With regards to Hoen, the path is not always the same (Fig. 1, #22, 26, and 28), thus there is a reason to have a system, which determines that the light has impinged on a photodetector.

With regards to Wingo, the fiber-optic communication system can be viewed as a path-to-sight link.

With regards to Huibers et al., see the explanation of the transmitter and receiver as recited above.

Also note that, the recitation path-to-sight has not been given patentable weight because the recitation occurs in the preamble. A preamble is generally not accorded any patentable weight where it merely recites the purpose of a process or the intended use of a structure, and where the body of the claim does not depend on the preamble for completeness but, instead, the process steps or structural limitations are able to stand alone.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Chih-Cheng Glen Kao whose telephone number is (703) 605-5298. The examiner can normally be reached on M - Th (8 am to 5 pm).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert Kim can be reached on (703) 305-3492. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 308-7722 for regular communications and (703) 308-7724 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

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November 17, 2002



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